Claims

1. Device (30, 70) for dividing a glass plate, comprising a supporting surface (31, 52, 73) for supporting the glass plate in an essentially vertical position, characterized by at least one horizontal breaking device (39, 40, 42) for breaking the glass plate (102, 102b) along a line (Y1, Y2) that extends essentially horizontally.

2. Device according to claim 1, characterized in that it further comprises at least one vertical breaking device (23, 41, 84, 85, 86) for breaking the glass plate (10, 102, 102a-d) along a line (X0, X1, Z1, Z2) that extends essentially vertically.

3. Device according to claim 1 or 2, characterized in that the horizontal breaking device (39, 40, 42) is displaceable in the vertical direction.

4. Device according to one of claims 1 to 3, characterized in that the horizontal breaking device (39, 40, 42) includes at least one break bar (42).

5. Device according to one of claims 1 to 4, characterized in that it comprises holding means (39) allowing to hold the glass plate (102, 102b) above the essentially horizontally extending line (Y1, Y2).

6. Device according to claim 5, characterized in that the holding means (39) are integrated in the supporting surface (31) and are displaceable together with the supporting surface (31) in the vertical direction.

7. Device according to one of claims 1 to 6, characterized in that the supporting surface (31) comprises bars (45) that are attached in an articulated manner.

8. Device according to one of claims 5 to 7, characterized in that the holding means (39) comprise suction devices (53) that are connectable to the glass plate (13) by partial vacuum.

9. Device according to one of claims 1 to 8, characterized in that it comprises another horizontal breaking device (77, 78, 80) provided with a break bar (80) whose profile is wedge-shaped.

10. Device according to one of claims 1 to 9, characterized in that it comprises a multiple of air nozzles (56) for generating an air cushion between the supporting surface (52) and the glass plate (12).

11. Device according to one of claims 1 to 10, characterized in that it comprises conveyor means (22, 32, 42) for horizontally displacing the glass plate (10) resp. portions (102, 102a-d) that have been separated therefrom.

12. Installation (20, 30, 70, 90) for processing glass plates with a device according to one of claims 1 to 11.

13. Method for dividing a glass plate (102, 102b) that is in an essentially vertical position, characterized in that it is broken at a breaking station (30) along a first line (Y1, Y2) that extends essentially horizontally during the breaking process.

14. Method according to claim 13, characterized in that the glass plate (102, 102b), before being broken along the first line (Y1, Y2), is lifted in the vertical direction.

15. Method according to one of claims 13 to 14, characterized in that the glass plate (102, 102b) is divided at the breaking station (30) into an upper portion (102b, 102d) and a lower portion (102a, 102c), then the lower portion (102a, 102c) is removed from the breaking station (30) and then the upper portion (102b, 102d) is either broken along a second line (Y2) that extends essentially horizontally or is removed from the breaking station (30).

16. Method according to one of claims 13 to 15, characterized in that the glass plate (10) is first divided into a left-hand portion (101) and a right-hand portion (102) along a vertically extending line (X1) and then the right-hand portion (102) is broken along the first line (Y1).

17. Method according to one of claims 13 to 16, characterized in that portions (102a, 102c, 102d) that have been broken off at the breaking station (30) are supplied to a further breaking station (70) where they are broken along a horizontal line (Y0) and/or a vertical line (X0, Z1, Z2).

18. Method according to one of claims 13 to 17, characterized in that the glass plate (102, 102b) is supplied to the breaking station (30) laterally.

19. Method according to one of claims 13 to 18, characterized in that the portions (102, 102a, 102c, 102d) broken off from the glass plate (10) are transported exclusively translationally inside the breaking station (30)

and are then removed translationally from the breaking station (30).

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